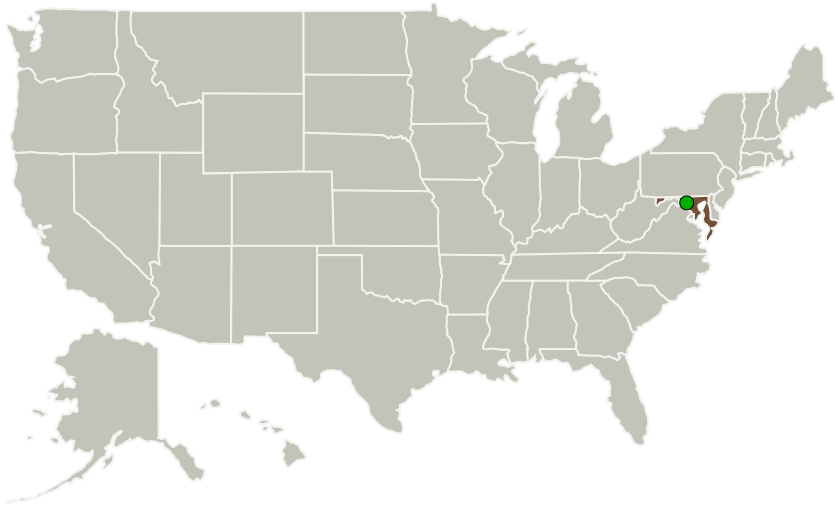
Towards Rapid Application Provisioning in the Cloud, Phase I

Completed Technology Project (2012 - 2012)

Project Introduction

Cloud computing holds promise to deliver computing as a utility to scientists and large user communities. While vast computational resources could be made available instantly on cloud computing platforms, system installation and application configuration on top of these resources is still a time- and labor-consuming process, especially for compute- and data-intensive HPC applications running in large clusters. We are going to develop a rapid application provisioning tool that allows users to automate system installation, application compilation/deployment/execution on ephemeral and elastic cloud servers. Using our deliverables, users can also take advantage of cloud-based massively-scalable parallelization framework to process user-supplied (scientific) datasets. We are going to demonstrate our prototype on both public and private clouds using applications, benchmarks and data formats of NASA interest.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
Open Research, Inc.	Lead Organization	Industry Minority-Owned Business, Women-Owned Small Business (WOSB)	Bethesda, Maryland
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations
Maryland

Project Transitions

February 2012: Project Start

August 2012: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139531)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Open Research, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

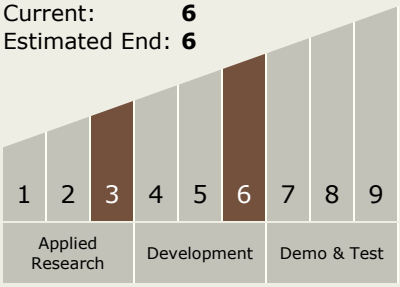
Carlos Torrez

Principal Investigator:

Qiming He

Technology Maturity (TRL)

Start: **3**
Current: **6**
Estimated End: **6**



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Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  - TX11.6 Ground Computing
    - TX11.6.8 Cloud Computing

Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System